



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket: BRO1

In re Application of:	)	Confirmation No.: 7056
Christoffer BRO	)	Art Unit: 1636
	)	
Appln. No.: 10/613,219	)	Examiner:
	)	
Filed: July 7, 2003	)	Washington, D.C.
	)	
For: METABOLICALLY ENGINEERED	)	February 10, 2004
MICRO-ORGANISMS HAVING IMPROVED...	)	

INFORMATION DISCLOSURE STATEMENT [IDS]

Honorable Commissioner for Patents  
U.S. Patent and Trademark Office  
2011 South Clark Place  
Customer Window, Mail Stop DD  
Crystal Plaza Two, Lobby, Room 1B03  
Arlington, Virginia 22202

Sir :

This Information Disclosure Statement is submitted in accordance with 37 CFR §§1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

1. This IDS should be considered, in accordance with 37 CFR §1.97, as it is filed:

[ ] A. within three months of the filing date of the above-identified national application or within three months of the entry into the national stage of the above-identified international application.

[XX] B. before the mailing date of a first Office action on the merits or before the mailing of a first Office action after the filing of a Request for Continued Examination under 37 C.F.R. §1.114.

In re Appln. No.

☐ C. after (A) and (B) above, but before final rejection or allowance, and Applicants have made the necessary certification (box "i" below) or paid the necessary fee (box "ii" below).

*(Check one of the boxes "i" and "ii" below:)*

☐ i. Counsel certifies that, upon information and belief, each item of information listed herein was either

☐ (a) first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

☐ (b) not cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of undersigned after making reasonable inquiry, was not known to any individual designated in §1.56(c) more than three months prior to the filing of this IDS.

***(use one and delete other of following)***

☐ ii. A check (check no. \_\_\_\_\_) for the fee set forth in §1.17(p), presently believed to be \$180, is enclosed. If the enclosed payment is incorrect, please charge any additional fees or credit any overpayment to Deposit Account No. 02-4035.

☐ ii. Credit Card Payment Form, PTO-2038, is attached authorizing payment of the fee set forth in §1.17(p), presently believed to be \$180. If the enclosed payment is incorrect, please charge any additional fees or credit any overpayment to Deposit Account No. 02-4035.

☐ D. after (A), (B) and (C) above, but before payment of the issue fee: Applicant(s) state as follows under 37 CFR

In re Appln. No.

§1.97(e) for consideration of this IDS, that, upon information and belief, each item of information listed herein was either

*(Check one of the boxes "a" and "b" below)*

☐ (a) first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

☐ (b) was not cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the undersigned after making reasonable inquiry, was not known to any individual designated in §1.56(c) more than three months prior to the filing of this IDS.

***(use one and delete other of following and this note)*** A check (check no. \_\_\_\_\_) for/ Credit Card Payment Form, PTO-2038, is attached authorizing payment of the fee set forth in §1.17(p), presently believed to be \$180 is enclosed. If the enclosed payment is incorrect, please charge any additional fees or credit any overpayment to Deposit Account No. 02-4035.

2. In accordance with 37 CFR §1.98, this IDS includes a list (e.g., Form PTO/SB/08A) of all patents, publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto. A copy of each document listed is attached, except as explained below.

*(check boxes A, B and/or C and fill in blanks, if appropriate)*

☐ A. Document(s) \_\_\_\_\_ is (are) deemed substantially cumulative to document(s) \_\_\_\_\_, and, in accordance with §1.98(c), only a copy of each of the latter documents is enclosed.

☐ B. Certain documents were previously cited by or submitted to the Office in the following prior application(s), which are relied upon under 35 U.S.C. 120:

*(insert serial numbers and filing dates of prior applications)*

In re Appln. No.

Applicant(s) identifies these documents by attaching hereto copies of the forms PTO-892 and PTO-1449 (or PTO/SB/08A) from the files of the prior application(s) or a fresh PTO-1449 (or PTO/SB/08A) listing these documents, and request that they be considered and made of record in accordance with §1.98(d). Per 37 CFR §1.98(d), copies of these documents need not be filed in this application.

☐ C. Document(s) \_\_\_\_\_ is (are) U.S. patent(s) and/or published application(s). As this is a U.S. application filed after June 30, 2003, or an entry into national stage under 35 USC §371 after June 30, 2003, the requirement to file copies of such U.S. patents or published applications has been waived. (Office of Patent Legal Administration - Pre O.G. Notice of July 11, 2003).

3. Document(s) \_\_\_\_\_ is (are) not in the English language. In accordance with §1.98(c), Applicant(s) states:

☐ An English translation of each document \_\_\_\_\_ (or of the pertinent portions thereof), or a copy of each corresponding English-language patent or application, or English-language abstract (or claim) is enclosed.

☐ A concise explanation of the relevance of document(s) \_\_\_\_\_ is found in the attached \_\_\_\_\_ search report (see reply to Comment 68 in the preamble to the final rules; 1135 OG 13 at 20).

☐ A concise explanation of the relevance of document(s) \_\_\_\_\_ is set forth as follows:

*(insert concise explanation of relevance)*

☐ A concise explanation of the relevance of document(s) \_\_\_\_\_ can be found on page(s) \_\_\_\_\_ of \_\_\_\_\_ the specification.

☐ A concise explanation of document(s) \_\_\_\_\_ can be found on the attached sheet.

In re Appln. No.

4. No explanation of relevance is necessary for documents in the English language (see reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

5. Other information being provided for the examiner's consideration follows:


*(insert other information)*

6. In accordance with 37 CFR §§1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in §1.56 (b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant(s) reserves the right to prove that the date of publication is in fact different.

Respectfully submitted,

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Attorneys for Applicant(s)

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Substitute for form 1449A/PTO		Complete if Known	
		Application Number	10/613,219
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Filing Date	July 7, 2003
		First Named Inventor	Christoffer BRO
		Group Art Unit	1636
		Examiner Name	
		Attorney Docket Number	BRO1
(use as many sheets as necessary)			
Sheet	1	of	3

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	AA	BERGMEYER et al "Samples, reagents, assessment of results," <u>Methods of enzymatic analysis</u> 2 (2): 278-9, 326-7 (1983)	
	AB	BRO et al "Metabolic engineering of the galactose utilization pathway in <i>Saccharomyces cerevisiae</i> using DNA arrays," 3 <sup>rd</sup> International Conference on Systems Biology Kurohinska Institutet, Sockholm Sweden (December 13-15, 2002)	
	AC	BRO et al "The Impact of DNA arrays on Metabolic Engineering," <u>Esbies 4 Symposium</u> Delft University of Technology, The Netherlands (August 28-31, 2002)	
	AD	DAUGHERTY et al "Purification and Properties of Phosphoglucumutase from Fleischmann's Yeast", <u>Eur. J. Biochem.</u> 57: 115-128 (1975)	
	AE	DIJKEN et al "An interlaboratory comparison of physiological and genetic properties of four <i>Saccharomyces cerevisiae</i> strains", <u>Enzyme and Microbial Technology</u> 26: 706-714 (2000)	
	AF	ELSEVIER et al "Heterodimer formation and activity in the human enzyme glactose-1-phosphate uridylyltransferase", <u>Proc. Natl. Acad. Sci. USA</u> Genetics 93: 7166-7171 (July, 1996)	
	AG	FROLOVA et al "Binding of the glucose-dependent Mig1p repressor to the <i>GAL1</i> and <i>GAL4</i> promoters in vivo: regulation by glucose and chromatin structure", <u>Nucleic Acids Research</u> 27 (5): 1350-1358 (1999)	
	AH	IDEKER et al "Integrated Genomic and Proteomic Analyses of a Systematically Perturbed Metabolic Network", <u>SCIENCE</u> 292: 929-934 (May 4, 2001)	
	AI	JOHNSTON "A Model Fungal Gene Regulatory Mechanism: the <i>GAL</i> Genes of <i>Saccharomyces Cerevisiae</i> ", <u>S. Cerevisiae Gal Genes</u> 51 (4): 458-476 (1987)	
	AJ	JOHNSTON et al "Regulation of Carbon and Phosphate Utilization", <u>The Molecular and Cellular Biology of the Yeast Saccharomyces: Gene Expression</u> 2, Chapter 5: 193-281 (1992)	
	AK	KELEHER et al "Ssn6-Tup1 Is a General Repressor of Transcription in Yeast", <u>Cell</u> 68: 709-719 (February 21, 1992)	
	AL	KLEIN et al "Glucose control in <i>Saccharomyces cerevisiae</i> : the role of <i>MIG1</i> in metabolic functions", <u>Microbiology</u> 144: 13-24 (1998)	

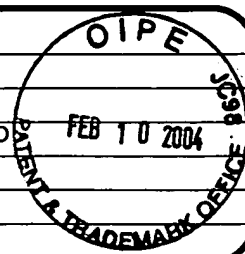
Examiner Signature	Date Considered
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\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	10/613,219
				Filing Date	July 7, 2003
				First Named Inventor	Christoffer BRO
				Group Art Unit	1636
				Examiner Name	
Sheet	2	of	3	Attorney Docket Number	BRO1



OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>	
	AM	LOWRY et al "Protein Measurement with the Folin Phenol Reagent", <u>J. Biol. Chem.</u> 193: 265-275 (1951)		
	AN	MASUDA et al "Phosphoglucosyltransferase Is an <i>in Vivo</i> Lithium Target in Yeast", <u>The Journal of Biological Chemistry</u> 276 (41): 37794-37801 (October 12, 2001)		
	AO	MELCHER "Galactose Metabolism in <i>Saccharomyces cerevisiae</i> : A Paradigm for Eukaryotic Gene Regulation", <u>In Yeast Sugar Metabolism: Biochemistry, genetics, biotechnology, and applications</u> Chapter 14: 235-269		
	AP	MIZOGUCHI et al "Erythrocyte galactokinase assay with high performance liquid chromatography", <u>Clinica Chimica Acta</u> 216: 145-151 (1993)		
	AQ	MØLLER et al "Steady-state and transient-state analyses of aerobic fermentation in <i>Saccharomyces kluyveri</i> ", <u>FEMS Yeast Research</u> 2: 233-244 (2002)		
	AR	NIELSEN "Metabolic engineering", <u>Appl. Microbiol. Biotechnol.</u> 55: 263-283 (2001)		
	AS	OH "Transcription of a Yeast Phosphoglucosyltransferase Isozyme Gene Is Galactose Inducible and Glucose Repressible", <u>Molecular and Cellular Biology</u> 10 (4): 1415-1422 (1990)		
	AT	OSTERGAARD et al "Increasing galactose consumption by <i>Saccharomyces cerevisiae</i> through metabolic engineering of the GAL gene regulatory network", <u>Nature Biotechnology</u> 18: 1283-1286 (December, 2000)		
	AU	PLATT et al "The yeast galactose genetic switch is mediated by the formation of a Gal4p-Gal3p complex", <u>The EMBO Journal</u> 17 (14): 4086-4091 (1998)		
	AV	PURNELLE et al "Analysis of an 11.7 kb DNA Fragment of Chromosome XI Reveals a New tRNA Gene and Four New Open Reading Frames Including a Leucine Zipper Protein and a Homologue to the Yeast Mitochondrial Regulator ABF2", <u>YEAST</u> 10: 125-130 (1994)		
	AW	TREITEL et al "Repression by SSN6-TUP1 is directed by MIG1, a repressor/activator protein", <u>Proc. Natl. Acad. Sci. USA</u> 92: 3132-3136 (April, 1995)		
	AX	VERDUYN et al "Effect of Benzoic Acid on Metabolic Fluxes in Yeasts: A Continuous-Culture Study on the Regulation of Respiration and Alcoholic Fermentation", <u>YEAST</u> 8: 501-517 (1992)		

Examiner Signature	Date Considered
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\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

*(use as many sheets as necessary)*

Sheet	3	of	3
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### Complete if Known

Application Number	10/613,219
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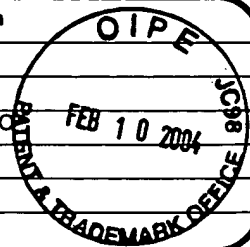
Filing Date	July 7, 2003
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First Named Inventor	Christoffer BRO
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Group Art Unit	1636
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**Examiner Name**

Attorney Docket Number	BRO1
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## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

[illegible]

**Examiner  
Signature**

Date  
Considered

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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